

WHAT IS CLAIMED IS:

1. A short message service switching private branch exchange system, comprising:

an office line interface unit that interfaces with office lines;

a voice mail interface unit that converts a pulse code modulation format short message service signal transmitted from the office line interface unit into short message service data, and converts the short message service data into a format of a terminal that will receive the short message service data;

a control unit that switches a pulse code modulation channel of an office line to which a speech path is coupled into a pulse code modulation channel of a digital signal processor, and determines a type of the terminal that will receive the short message service data; and

an extension line interface unit that transmits an short message service signal having the format corresponding to the terminal determined by the control unit.

2. The system of claim 1, wherein the office line interface unit comprises at least one of:

an analog office line interface unit that couples an analog office line and converts an analog format of an short message service signal transmitted through the analog office line into a pulse code modulation format; and

an integrated services digital network office line interface unit that couples an integrated services digital network office line and receives a short message service signal of a pulse code modulation format through the integrated services digital network office line.

3. The system of claim 1, wherein the voice mail interface unit comprises:

a digital signal processor that converts the pulse code modulation format short message service signal transmitted from the office line interface unit into the short message service data by decoding, converting the short message service data into a second pulse code modulation format short message service signal when the short message service data is transmitted to a single line terminal, and outputs the short message service data as is when the short message service data is transmitted to a digital terminal; and

a memory that stores the short message service data.

4. The system of claim 1, wherein the extension line interface unit comprises at least one of:

an single line terminal extension line interface unit that couples to an single line terminal and converts the pulse code modulation format short message service signal into an analog format short message service signal by using a coder/decoder; and

a digital terminal extension line interface unit that couples to a digital terminal.

5. The system of claim 1, wherein the control unit determines whether a digital signal processor resource exists when a speech path is connected, waits for a prescribed time

until the digital signal processor becomes a usable state if the digital signal processor resource does not exist, and finishes a reception of the short message service signal if the digital signal processor resource does not appear until the prescribed time has elapsed.

6. The system of claim 1, wherein the office line interface unit comprises:

an analog office line interface unit that couples an analog office line and converts an analog format of an short message service signal transmitted through the analog office line into a pulse code modulation format; and

an integrated services digital network office line interface unit that couples an integrated services digital network office line and receives a short message service signal of a pulse code modulation format through the integrated services digital network office line, wherein the voice mail interface unit comprises;

a digital signal processor that converts the pulse code modulation format short message service signal transmitted from the office line interface unit into the short message service data by decoding, converting the short message service data into a second pulse code modulation format short message service signal when the short message service data is transmitted to a single line terminal, and outputting the short message service data as is when the short message service data is transmitted to a digital terminal, and

a memory that stores the short message service data, and wherein the extension line interface unit comprises,

an single line terminal extension line interface unit that couples to the

single line terminal and converts the pulse code modulation format short message service signal into an analog format short message service signal by using a coder/decoder, and a digital terminal extension line interface unit that couples to the digital terminal.

7. A method for operating a private branch exchange system, comprising:
determining whether a digital signal processor can be detected when an office line and a speech path are connected to each other;
transmitting an short message service signal transmitted from the office line to the digital signal processor when the digital signal processor is detected;
determining an extension line terminal that will receive the short message service signal; and
transmitting the short message service signal to the determined extension line terminal from the usable digital signal processor.

8. The method of claim 7, further comprising:
waiting for a prescribed detection time when the digital signal processor is not detected; and
finishing a reception of the short message service signal if the usable digital signal processor does not become usable until the prescribed detection time has elapsed.

9. The method of claim 7, wherein when the office line is a public switched telephone network office line, a switched telephone network office line interface unit converts a frequency shift keying format short message service signal to a pulse code modulation format short message service signal and transmits the pulse code modulation format short message service signal to the digital signal processor.

10. The method of claim 7, wherein when the office line is an integrated services digital network office line, a integrated services digital network office line interface unit transmits a pulse code modulation format short message service signal to the digital signal processor.

11. The method of claim 7, wherein the digital signal processor converts the received short message service signal into short message service data, and generates an short message service message corresponding to the extension line terminal according to a main processor.

12. The method of claim 11, wherein the usable digital signal processor generates a pulse code modulation format short message service signal if the extension line terminal is a single line terminal, and generates the short message service data if the extension line terminal is a digital terminal.

13. The method of claim 12, wherein the pulse code modulation format short message service signal is converted into an frequency shift keying format short message service signal by a coder/decoder and the frequency shift keying format short message service signal is transmitted to the single line terminal.

14. A method for switching short message service of a private branch exchange system, comprising:

switching a pulse code modulation channel of an office line interface unit to a pulse code modulation channel of a digital signal processor if a speech path is connected to the office line interface unit;

transmitting an short message service signal to the digital signal processor from the office line interface unit through the pulse code modulation channel;

decoding the short message service signal transmitted to the digital signal processor;

switching the pulse code modulation channel of the digital signal processor to a pulse code modulation channel of an single line terminal extension line interface unit if an extension line terminal that will receive the short message service signal is an single line terminal; and

switching an short message service data channel of the digital signal processor to an short message service data channel of a digital terminal extension line interface unit if the extension line terminal that will receive the short message service signal is a digital terminal.

15. The method of claim 14, wherein when the office line interface unit is a switched telephone network office line interface unit, an frequency shift keying format short message service signal transmitted through a switched telephone network office line is converted into a pulse code modulation format short message service signal and the pulse code modulation format short message service signal is transmitted to the digital signal processor.

16. The method of claim 14, wherein when a pulse code modulation format short message service signal is transmitted through the pulse code modulation channel of the digital signal processor, the single line terminal extension line interface unit converts the PCM format short message service signal into an frequency shift keying format short message service signal and transmits the frequency shift keying format short message service signal to an single line terminal.

17. A private branch exchange system, comprising:
a single digital signal processor that receives a short message service signal in a first format and converts the short message service signal in to a second format; and
a controller that controls the digital signal processor and determines the second format.

18. The system of claim 17, wherein the digital signal processor receives the first format short message service signal in one of an office line of the system and an extension line of the system, and transmits the converted second format short message service signal to the other of the office line and the extension line.

19. The system of claim 18, wherein the digital signal processor is in a voice mail interface unit.